SECTION C - ARS INDUSTRIAL HYGIENE FUNCTION

CHAPTER IV - ARS HAZARD COMMUNICATION PROGRAM

CHAPTER IV

ARS HAZARD COMMUNICATION AND COMMUNITY RIGHT-TO-KNOW PROGRAM

CONTENTS STARTING PAGE

CHAPTER IV - SECTION C

ARS HAZARD COMMUNICATION AND COMMUNITY RIGHT-TO-KNOW PROGRAM

A PURPOSE OF CHAPTER

This chapter

1 States policy and responsibilities for developing, implementing, and managing a Hazard Communication Program.

2 Establishes the scope of the program.

3 Establishes the minimum program elements to be included in the program.

B APPLICABILITY

The contents of this chapter are applicable to all missions under the direction of the ARS Administrator whether accomplished by ARS personnel, cooperators, or contractors within ARS. Exceptions to the provisions of this MANUAL require Office of the Administrator approval. Waivers must be documented and copies furnished to the next higher management level. In all instances, however, program coverage consistent with the intent of the pertinent provisions will be provided.

C SUMMARY

This chapter contains the required criteria and procedures for personnel at ARS Locations to develop, implement, and manage a Hazard Communication Program. Specific information is provided on the following minimum program elements:

1 Written program

2 Chemical agent inventory system

3 MSDS reference file system

4 Labeling and other forms of warning

5 Employee information and training

The information in this MANUAL applies to chemical agents. For related provisions regarding information on the physical and health hazards that may result from exposure to biological agents in the workplace contact the ARS Biological Safety Officer or your Location Biosafety Committee.

C SUMMARY (continued)

The criteria and procedures contained in this MANUAL do not apply to the following substances:

1 Any hazardous waste as defined by the Solid Waste Disposal Act (as amended by the Resource Conservation and Recovery Act of 1976) and regulated by the Environmental Protection Agency;

2 Tobacco or tobacco products;

3 Wood or wood products;

4 Articles;

5 Foods, drugs, or cosmetics intended for personal consumption by employees; and

6 Any consumer product as defined by the Consumer Product Safety Act that is used in the same manner of normal consumer use and use of the product results in a duration and frequency of exposure which is not greater than exposures experienced by consumers.

D ABBREVIATIONS

AD - Area Director

AAO - Area Administrative Officer

ASHM - Area Safety and Health Manager

CAS - Chemical Abstracts Service

CD - Center Director

CDSO - Collateral Duty Safety Officer

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

CFR - Code of Federal Regulations

DAAM - Deputy Administrator, Administrative Management

DOT - Department of Transportation

EPA - Environmental Protection Agency

FD - Facilities Division

HCS - Hazard Communication Standard

IARC - International Agency for Research on Cancer

IUPA - International Union of Pure and Applied Chemistry

MSDS - Material Safety Data Sheet

OSHA - Occupational Safety and Health Administration

SHEMB - Safety, Health, and Environmental Management Branch

E DEFINITIONS

1 Acquisition - The process by which something is obtained for possession or control.

E DEFINITIONS (continued)

2 Acute Effect - Adverse effect on a human or animal which has severe symptoms developing rapidly and coming quickly to a crisis.

3 Article - A manufactured item which is formed to a specific shape or design during manufacture; which has end use functions dependent in whole or in part upon its shape or design during end use; and which does not release or otherwise result in exposure to a hazardous chemical under normal conditions of use.

4 Biological Agent - Any microorganism or its by-products presenting a physical hazard, health hazard, or potential risk of infection or disease in employees.

5 Carcinogen - A substance or agent capable of causing or producing cancer in mammals, including humans. A chemical is considered to be a carcinogen if:

o It has been evaluated by the International Agency for Research on Cancer (IARC) and found to be a carcinogen or potential carcinogen; or

o It is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or

o It is regulated by OSHA as a carcinogen.

6 CERCLA Hazardous Substance - A chemical agent included in Table 302.4, List of Hazardous Substances and Reportable Quantities, of 40 CFR Part 302.

7 Chemical Agent - Any element, chemical compound or mixture of elements and/or compounds.

8 Chemical Name - The name given to a chemical in the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS).

9 Chronic Effect - An adverse effect on a human or animal body, with symptoms which develop slowly over a long period of time or which recur frequently.

10 Combustible - A term used by NFPA, DOT, and others to classify certain liquids that will burn, on the basis of flash points. Both NFPA and DOT generally define "combustible liquids" as having a flash point

E DEFINITIONS (continued)

of 100F (37.8C) or higher but below 200F (93.3C).

11 Compressed Gas:

a A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70F (21.1C); or

b A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130F (54.4C) regardless of the pressure at 70F (21.1C); or

c A liquid having a vapor pressure exceeding 40 psi at 100F (37.8C) as determined by ASTM D-323-72.

12 Corrosive - A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. For example, a chemical is considered to be corrosive if, when tested on the intact skin of albino rabbits by the method described by the U.S. Department of Transportation in Appendix A to 49 CFR Part 173, it destroys or changes irreversibly the structure of the tissue at the site of contact following an exposure period of 4 hours. This term shall not refer to action on inanimate surfaces.

13 Disposition - The process by which the possession or control of something is transferred or discarded.

14 Explosive - A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

15 Exposure or Exposed - State of being open and vulnerable to a hazardous chemical in the course of employment by inhalation, ingestion, skin contact, absorption, or any other course; includes potential (accidental or possible) exposure.

16 Extremely Hazardous Substance - A chemical agent included in Appendix A, List of Extremely Hazardous Substances and Their Threshold Planning Quantities, of 40 CFR Part 355.

17 Flammable - A chemical that includes one of the following categories:

E DEFINITIONS (continued)

a "Aerosol, flammable." An aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a

flame extending back to the valve) at any degree of valve opening;

b "Gas, flammable." A gas that can burn with the evolution of heat and flame.

c "Liquid, flammable." Any liquid having a flashpoint below 100F (37.8C), except any mixture having components with flashpoints of 100F (37.8C) or higher, the total of which make up 99 percent or more of the total volume of the mixture.

d "Solid, flammable." A solid, other than a blasting agent or explosive as defined in 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A solid is a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one tenth of an inch per second along its major axis.

18 Hazard Assessment - The process of determining if employees are potentially exposed to hazardous chemicals.

19 Hazardous Chemical - Any chemical whose presence or use is a physical hazard or a health hazard.

20 Health Hazard - A chemical for which there is significant evidence, based on at least one study conducted in accordance with established scientific principles, that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes.

E DEFINITIONS (Continued)

21 Hepatotoxin - A substance which produces liver damage.

22 Highly Toxic - A chemical falling within any of the following categories:

a A chemical with a median lethal dose (LD50) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

b A chemical with a median lethal dose (LD50) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.

c A chemical that has a median lethal concentration (LC50) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

23 Irritant - A chemical, which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. A chemical is a skin irritant if, when tested on the intact skin of albino rabbits by the methods of 16 CFR 1500.41 for 4 hours exposure or by other appropriate techniques, it results in an empirical score of 5 or more. A chemical is an eye irritant if so determined under the procedure listed in 16 CFR 1500.42 or other appropriate techniques.

24 Laboratory Operation - An operation involving the "laboratory use of hazardous chemicals".

25 Laboratory Scale - Work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person.

26 Laboratory Use of Hazardous Chemicals - Handling or use of chemical agents in which all of the following conditions are met:

a Chemical manipulations are carried out on a "laboratory scale";

E DEFINITIONS (Continued)

b Multiple chemical procedures or chemicals are used;

c The procedures involved are not part of a production process, nor in any way simulate a production process; and

d Protective laboratory practices and equipment are available and in use to minimize the potential for employee exposure to hazardous chemicals.

27 Material Safety Data Sheet is a document that describes the physical and chemical properties of an agent, the physical and health hazards associated with an agent, safe methods of disposal, and precaution for safe handling and use of an agent.

28 Mutagen - A substance capable of altering the genetic material in a living cell.

29 Nephrotoxin - A substance which produces kidney damage.

30 Neurotoxin - A substance which produces its primary toxic effect on the nervous system.

31 Organic Peroxide - An organic compound that contains the bivalent -0-0 structure and may be considered a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

32 Oxidizer - A chemical other than a blasting agent or explosive that initiates or promotes combustion in other materials, causing fire either by itself or through the release of oxygen or other gases.

33 Physical Hazard - Means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

34 Pyrophoric - A chemical that will ignite spontaneously in air at a temperature of 130F (54.4C) or below.

35 Radioactive - A substance that emits rays either naturally or as a result of scientific manipulation.

E DEFINITIONS (Continued)

36 Radionuclide - An isotopic form of an element, either natural or artificial that exhibits radioactivity.

37 Reproductive Toxin - Substances that affect either male or female reproductive systems and may impair the ability to have children.

38 Requisitioner - The person or individual who submits a written request to procure an item.

39 Sensitizer - A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

40 Toxic - A chemical falling within any of the following categories:

a A chemical with a median lethal dose (LD50) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

b A chemical that has a median lethal dose (LD50) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less, if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

c A chemical that has a median lethal concentration (LC50) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

41 Trade Secret - Any confidential formula, pattern, process, device, information or compilation of information that is used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it.

E DEFINITIONS (Continued)

42 Unstable Reactive - A chemical that, in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or become self-reactive under conditions of shocks, pressure, or temperature.

43 Water-Reactive - A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

F SCOPE

This chapter applies to all ARS employees including part-time, seasonal, and temporary employees who are

identified for inclusion in the program based on a hazard assessment.

A hazard assessment must be performed for all chemical and biological agents known to be present in the workplace. For the hazard assessment of chemical agents only, it is ARS policy to rely on the physical and health hazard evaluations done by chemical manufacturers and importers, that are written on MSDS prepared by them and provided to ARS.

This chapter does not apply to:

1 Any hazardous waste as defined by the Solid Waste Disposal Act (as amended by the Resource Conservation and Recovery Act of 1976) and regulated by the Environmental Protection Agency;

2 Tobacco or tobacco products;

3 Wood or wood products;

4 Foods, drugs, or cosmetics intended for personal comsumption by employees; and

5 Any consumer product as defined by the Consumer Product Safety Act that is used in the same manner of normal consumer use by the general public.

G POLICY

It is ARS policy to provide information and training to employees on the potential physical and health hazards that may result from exposure to chemical and biological agents in their work environment. Information and training shall be provided to employees by implementing and maintaining the following minimum elements of a Hazard Communication Program:

G POLICY (Continued)

1 Written program.

2 Chemical and biological agent inventory system.

3 MSDS reference file system.

4 Labeling/warning signs.

5 Training program.

H AUTHORITIES

1 Executive Order 12196, Occupational Safety and Health Programs for Federal Employees.

2 29 CFR Part 1960, Basic Program Elements for Federal Employee Occupational Safety and Health Programs.

3 29 CFR Part 1910.1200, Hazard Communication.

4 Emergency Planning and Community Right-to-Know Act of 1986 and implementing regulations:

a 40 CFR Part 302, Designation, Reportable Quantities, and Notification.

b 40 CFR Part 355, Emergency Planning and Notification.

c 40 CFR Part 370, Hazardous Chemical Reporting: Community Right-to-Know.

5 48 CFR Part 23.3, Hazardous Material Identification and Material Safety Data.

6 Departmental Regulation 4400-2, Hazard Communication Programs.

7 Departmental Regulation 5023.1, Chemical Hazard Communication.

I RESPONSIBILITIES

1 AD's, Under the Direction of the Administrator, will:

a Initiate and operate a comprehensive and viable Area Hazard Communication and Community Right-To-Know Program consistent with the requirements set forth in applicable legislative/executive mandates and the requirements of this chapter.

I RESPONSIBILITIES (Continued)

b Provide the necessary qualified subordinate staffing, education/training, equipment, financial resources, and management support to develop and manage a comprehensive and viable program.

c Inform and hold subordinate supervisors accountable for implementation and monitoring the program requirements as established in this chapter.

2 Center Directors, Location Coordinators, and Research Leaders, will:

a Implement/manage/monitor and comply with guidance as provided in this chapter and as required by 29 CFR Part 1910.1200 and 40 CFR Part 355.

b Inform and hold subordinate supervisors responsible for implementing and managing this program. Procedures as provided in this chapter are the responsibility of this level of supervision.

c Comply with responsibilities identified in this MANUAL.

d Establish and maintain an inventory of all chemical and biological agents known to be present at the Location and ensure it is updated at least annually.

e Establish and maintain a MSDS reference file for all chemical and biological agents known to be present at the Location.

f Ensure that inventories and MSDS reference files are readily accessible to employees on the same workday so they can access information on the chemical and biological agents they handle.

g Ensure that labels on incoming containers of hazardous chemical and biological agents and hazard warning signs informing employees of the presence of these agents are not removed or defaced.

h Provide initial and periodic information and training on the Hazard Communication Program to supervisors and employees at the Location.

I RESPONSIBILITIES (Continued)

i Establish and maintain thorough documentation of Hazard Communication Program activities at the Location.

j Ensure that contractors and other outside service personnel are notified of the presence of hazardous chemical and biological agents in areas they will perform work and provide MSDS if requested.

k Ensure that the appropriate State emergency response commission and local emergency planning committee is notified, and contact is made with the Area office to obtain guidance and/or notify them, if there is a spill, discharge, or other unplanned release into the environment of a listed extremely hazardous substance or a listed CERCLA hazardous substance that exceeds the reportable quantity for that substance.

l Ensure appropriate submission of MSDS or inventories of hazardous chemical and biological agents upon request to State emergency response commissions, local emergency planning committees, or local fire departments serving the facility.

3 FD-SHEMB, will:

a Develop and update required guidance on the interpretation and application of 29 CFR Part 1910.1200 and 40 CFR Part 355 for use by ARS supervisors and employees.

b Assure all supervisory personnel and employees know of their responsibilities and rights as provided in 29 CFR Part 1910.1200 and 40 CFR Part 355.

c Provide assistance in the implementation of this program as requested.

4 AAO's, will:

a Assist line managers in identifying and allocating necessary qualified subordinate staffing, education/training, and financial resources, to develop and manage a comprehensive and viable Hazard Communication and Community Right-To-Know Program.

I RESPONSIBILITIES (Continued)

b Provide administrative management assistance to the AD in establishing Area Program.

c Recommend actions that enable the AD to comply with the intent, purpose, and standards of this chapter.

5 ASHM's, will:

a Coordinate and provide technical oversight to the implementation of this chapter for all Area employees, cooperators, and visitors.

b Ensure that all Location programs within the Area are consistent with this chapter.

c Establish specific procedures and operating criteria in conformance with DIRECTIVE and MANUAL 230.0, to implement, manage, and evaluate the Hazard Communication Program in their Area.

d Provide technical advice and guidance to Location and Area office personnel on the implementation and operation of the Hazard Communication Program.

e Review and evaluate program implementation and operation at the Locations in their Area during the annual inspection.

f Maintain recordkeeping and reporting procedures consistent with ARS policy.

g Contact FD-SHEMB to obtain guidance and/or notify them if there is a spill, discharge, or other unplanned release into the environment of a listed extremely hazardous substance or a listed CERCLA hazardous substance that exceeds the reportable quantity for that substance.

6 Radiological Safety Staff, will:

Provide technical advice and guidance to ARS management at all operational levels on hazard assessments and operational management of radiological agents.

7 Biological Safety Officer, will:

Provide technical advice and guidance to ARS management at all operational levels on hazard

assessments and operational management of biological agents.

I RESPONSIBILITIES (Continued)

8 All ARS Employees, will:

a Comply with all provisions of this chapter.

b Properly use all applicable safety, environmental, and personal protective equipment and clothing.

9 Contract Specialists and Purchasing Agents, will:

a Ensure that formal contracts contain language regarding identification and submission of hazardous chemical information in accordance with Federal Acquisition Regulations (i.e., 48 CFR 23.3) when it is contemplated that the contract will require the delivery of chemical agents.

b Ensure that purchase orders for chemical agents include a written request for a MSDS from the vendor when no MSDS for that specific chemical

is on hand at the Location requesting the chemical agent.

c Ensure that MSDS received under formal contracts and purchase orders are forwarded to the administrative office at the Location where the chemical agent is to be used, handled, or stored for entry into the chemical inventory system.

10 ARS Supervisors, will:

a Advise employees working under their supervision of the hazardous chemical and biological agents in their work area, methods available to reduce exposure to these agents (i.e., personal protective equipment, fume hoods), the location and availability of inventories and MSDS, and the Location's Hazard Communication Program procedures.

b Inform Center Directors, Location Coordinators, and Research Leaders when additional training is necessary because new chemical or biological agents are introduced in the work area that present new types of hazards or new employees are working in the area that have not previously been trained.

c Monitor the use of hazardous chemical and biological agents throughout the fiscal year.

I RESPONSIBILITIES (Continued)

d Provide a list, by spent container, of hazardous chemical and biological agents used in research throughout the year to Center Directors, Location Coordinators, and Research Leaders at the end of the fiscal year, to update the inventory.

e Notify Center Directors, Location Coordinators, and Research Leaders of spills, discharges, or other unplanned releases into the environment of a listed extremely hazardous substance or a listed CERCLA hazardous substance that exceeds the reportable quantity for that substance.

11 CEPS and OMB Circular A-76 Contractors Providing Safety, Health, and Environmental Support, will:

a Assist manager/supervisors in the development and implementation of the Program for Location employees.

b Assist in the delivery of education/training as required by this Program.

c Assist in the inventories as necessary for the development of appropriate Program requirements.

12 CDSO's , will:

a Review and evaluate the implementation and operation of the Location's Hazard Communication and Community Right-To-Know Program.

b Provide technical advice and guidance to Location management and employees concerning the policy and procedures of the Location's Hazard Communication Program.

13 ARS employees, will:

a Handle, use, and dispose of hazardous chemical and biological agents in accordance with ARS Safety and Health Directives and policy.

b Maintain the integrity of labels and warning signs informing them of the hazards of chemical and biological agents.

c Participate in information and training programs provided by ARS to inform them of the ARS Hazard Communication Program.

I RESPONSIBILITIES (Continued)

d Notify their supervisor of spills, discharges, or other unplanned releases into the environment of listed extremely hazardous substances or listed CERCLA hazardous substances that exceed the reportable quantity for that substance.

J PROGRAM DESCRIPTION/PROCEDURES

1 Written Program

Each Location that has activities in which hazardous chemicals are used, handled, or stored shall develop and maintain a written Hazard Communication Program. The written program is a plan, unique to the Location, which describes how the Location will implement and operate this program to comply with the provisions of the OSHA HCS and the implementing regulations of EPCRA. The written program does not have to be lengthy but must address the following specific elements:

a Describe the responsibilities of Location personnel who have a role in program operation;

b Describe how the chemical agent inventory system is maintained;

c Describe how the MSDS reference file system is maintained;

d Inform location personnel about the inventory system and MSDS reference file system and how to gain access to them;

e Describe how labels and other forms of warning are maintained at the Location;

f Describe how information and training are provided to employees;

g Explain how employees are informed of hazards associated with nonroutine tasks;

h Explain how employees are informed of hazards associated with hazardous chemicals in unlabeled pipes;

i Explain how contractors will be informed about hazards their employees may encounter while working in the facility;

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

Detailed guidance is provided in this MANUAL to assist Location personnel in the development and implementation of these elements. A sample written program is included in Exhibit 1 of this MANUAL to

provide a format for Location personnel to use in preparing their written Hazard Communication Program. Once the written program is prepared the Location must ensure that their employees are informed of its content and availability. This can be accomplished through information and training sessions.

2 Chemical Agent Inventory System

a Conducting the physical inventory and hazard assessment.

All Locations must maintain an inventory list of hazardous chemical agents known to be present in the

workplace. To prepare an inventory list, a physical inventory and hazard assessment must be done. This is a critical step in implementing the Hazard Communication Program because it identifies which hazardous substances and which employees will be covered by the Location's program.

The physical inventory is accomplished by entering all rooms and building spaces where chemical agents are present and writing down the name of the agent as it appears on the container label, building and room number or other Location identifier, and the quantity of the substance with its corresponding unit of measure. Only chemical agents in their original shipping container (i.e., bottle, drum) need to be listed. Do not list chemical agents in transfer containers, reaction containers (i.e., test tubes, flasks) and waste disposal containers.

All original containers must have labels. If an unlabeled container is found, and it is suspected of being the original container, then contact the supervisor in charge of the area where the unlabeled container is present to identify its contents.

For each chemical agent listed on the physical inventory a hazard assessment must be done. There are two key determinations to make in a hazard assessment. The first step is to determine whether the chemical agent is a health

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

hazard or physical hazard. The second step is to determine whether employees have a potential for exposure to the chemical agent. The

following procedure is recommended for making this determination.

determination that a chemical agent is present in an employee's work area will be sufficient to establish potential exposure.

Once you have determined that a chemical agent is a health hazard or physical hazard and there is potential employee exposure to that chemical agent, mark that agent as hazardous on the physical inventory. This will identify the agent as hazardous when preparing the master inventory list.

(3) Special requirements for chemicals synthesized in the laboratory:

In the case of a chemical synthesized in the laboratory, the requirements to perform an evaluation of the physical and health hazards of the chemical produced and prepare an MSDS will depend on whether the chemical is retained for use by the laboratory that synthesized it or whether it is shipped to other users. If retained by the laboratory for its use, no evaluation or preparation of an MSDS has to be done. However, information on the known hazards of the chemical composition shall be provided to employees exposed to the substance and appropriate personal protective equipment shall be used. If the laboratory ships the synthesized chemical to other users, and the intent is to manufacture the chemical for other users, then the laboratory must evaluate the hazards of the chemical produced, prepare an MSDS and provide the MSDS to the user. Otherwise, if the intent of the laboratory is not manufacturing but solely to allow another laboratory to use the synthesized chemical, then the only requirement is to inform the user that hazard information and personal protective equipment shall be provided to his or her employees exposed to the substance.

b Inventory Data

One master chemical agents inventory list shall be maintained by each Location in ARS. The master inventory list shall identify each hazardous agent as determined by the hazard

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

assessment. It is permissible to identify all agents, both hazardous and nonhazardous, on the

master inventory list, but all hazardous agents shall be specifically identified on the list. This shall be done by the symbol "H" next to the name of the chemical agent.

The master inventory list shall cover all facilities at the Location. Individual lists covering different organizational divisions (i.e., management units) at the Location can be maintained if desired. The master inventory list shall indicate the Location name, Location address, date of initial preparation or update, and name of the person in charge of inventory control. The master inventory list for chemical agents shall identify the following information:

(1) Chemical name

(2) CAS number

(3) Supplier name

(4) Number of containers

(5) Quantity in container in metric units

(6) Building number or name where container is located

(7) Room number or name of the room in the building where the container is located

(8) Physical state; solid, liquid, or gas

(9) EPA Hazard Category

(a) Acute: immediate health hazard including chemical agents that are toxic, highly toxic, irritant, sensitizer, and corrosive

(b) Chronic: delayed health effects including chemical agents that are carcinogens, mutagens, and reproductive toxins

(c) Fire hazard: chemical agents that are flammable, combustible, pyrophoric, and oxidizers

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

(d) Sudden release of pressure: chemical agents that are explosive and compressed gases

(e) Reactive hazard: chemical agents that are unstable reactive, organic peroxide, or water reactive.

(10) MSDS available at Location: yes or no.

c Inventory Control and Maintenance

The master inventory list can be maintained on hard copy (i.e., paper), electronic media (i.e., automated data processing systems) or microfiche. Existing inventory systems can be used but must be modified, if necessary, to include the inventory data identified in the previous section. Employees shall be informed of the location of the master inventory list and how to gain access to them. Employee access to the master inventory list is required to allow employees ready access to information on the hazardous chemical agents they handle in their work environment.

The master inventory list shall be updated at least annually. This shall be accomplished by implementing one of the following two methods as determined by the location:

(1) Method A: This method requires you to conduct a complete physical inventory and hazard assessment once each year. This method is time consuming and labor intensive but may be preferable for those Locations that do not maintain large numbers or quantities of hazardous chemical agents. Use of this method will produce a new master inventory list each year which will replace the master inventory list of the previous year.

(2) Method B: Those Locations electing not to use Method A shall use Method B to update their master inventory list. This method provides for a system that continually updates the master inventory list. It requires implementation of the following administrative procedures that center around the procurement function at the Location. The following administrative procedures for Method B shall be used:

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

(a) Acquisition

1) All procurement requests for chemical agents shall be forwarded to the purchasing agent or other procurement authority at the Location for processing.

2) All procurement requests for chemical agents shall be checked against the master inventory list to determine if the agent being requested is currently in stock. If it is in stock, the requisitioner shall be notified that the chemical agent they want is currently in stock and sufficient quantities may be available. Every effort shall be made to use existing stock to minimize excess purchases and future hazardous waste disposal costs.

3) After processing the procurement request, a confirming copy of the procurement request shall be sent to the requisitioner along with a copy of Exhibit 2, Inventory Control Sheet for Acquisition of Chemical Agents. Upon receipt of the chemical shipment by the requisitioner, he or she shall complete the information on Exhibit 2 as follows:

a) Review the MSDS received with the chemical shipment and perform a hazard assessment. Based on your hazard assessment mark in section A of Exhibit 2 if the chemical agent is hazardous or not hazardous. If not hazardous, do not complete

section B, C, or D and return Exhibit 2 to the procurement authority at

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

the Location for filing with the procurement request.

b) If the chemical agent is hazardous complete the information in section B, Inventory Data, and section C, MSDS Status, on Exhibit 2. Section C, MSDS Status, is a series of three questions to be answered in sequence which will determine the need for a MSDS Action in section D of Exhibit 2. After completing section B and C the requisitioner shall forward Exhibit 2 along with the MSDS, if one was received with the chemical shipment, to the procurement authority or other person responsible

for inventory control at the Location for final action. The requisitioner should keep a copy of the MSDS if it identifies new or updated information or if it is a new chemical agent for which additional training of employees will be necessary.

4) Upon receipt of Exhibit 2 and the MSDS if one was received with the shipment, the individual with procurement authority or other person responsible for inventory control at the Location shall review the questions and answers given in section C of Exhibit 2 and take the actions necessary to complete section D. If the answer to question 1 of section C is no, enter the date of the written request for a MSDS in item 1 of section D

to document that a MSDS was requested but none was received from the vendor. If the answer

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

to question 2 of section C is no, take the necessary actions to enter the inventory data of section B on the master inventory list, place the MSDS in the Location MSDS reference file system and enter the dates that these actions are taken in items 2 and 3 of section D. If the answer to question 3 of section C is yes, replace the old MSDS with the new MSDS received with the chemical shipment in the MSDS reference file system and enter the date of this action in item 3 of section D.

a) Disposition

i All disposition records for hazardous chemical agents shall be initiated by the management units at the Location and forwarded to the procurement authority or other person responsible for inventory control at the Location for final processing.

ii All management units shall maintain copies of Exhibit 3, Inventory Control Sheet, for Disposition of Chemical Agents, in the work area at all times. It shall be used to list all hazardous chemical agents that are used up or consumed in work operations and processes. List only those agents that were in their original

shipping containers. Identify on Exhibit 3, for each empty

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

container, the chemical name as it appears on the label, the CAS number of the chemical agent, the container size or quantity that was in the container, and the supplier's name as it appears on the label.

iii At the end of each calendar year quarter the management units shall forward the completed disposition record (i.e., Exhibit 3) to the procurement authority or other person responsible for inventory control at the Location and begin a new disposition record for the next quarter.

iv Upon receipt of Exhibit 3 the procurement authority or other person responsible for inventory control at the Location shall ensure that action is taken to delete the quantities of hazardous chemical agents from the master inventory list. This may entail deletion of the chemical agent entirely from the master inventory list if the total quantity for that agent is expended.

The master inventory list and the inventory control sheets (i.e.,

Exhibits 2 and 3) are considered exposure records in accordance with OSHA standard 29

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

CFR 1910.20, Access to Employee Exposure and Medical Records. As exposure records, they shall be retained for a period of thirty years. If Method A is used for inventory maintenance, all old master inventory lists up to thirty years old shall be retained. If Method B is used for inventory maintenance,

all inventory control sheets along with the original master inventory lists shall be retained for thirty years.

3 MSDS Reference File System

a MSDS Data

An MSDS shall be maintained for each hazardous chemical agent on the master inventory list. The chemical agent identified on the MSDS must be cross referenced to the same chemical agent on the master inventory list. This ensures that the MSDS is available and can be located by a person who needs to see it. For this purpose the CAS number shall be used as the cross reference.

The OSHA HCS specifies and describes the type of information that must be included on a MSDS for chemical agents. The type of information that must be supplied is as follows:

(1) Chemical name

(2) Hazardous ingredients

(3) Physical and chemical characteristics

(4) Fire and explosion hazard data

(5) Reactivity data

(6) Health hazard data

(7) Emergency and first aid procedures

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

(8) Precautions for safe handling and use

(9) Spill cleanup procedures

(10) Hazard control measures (i.e., ventilation, personal protective equipment)

(11) Date MSDS was prepared or updated

(12) Name, address and telephone number of responsible party who prepared the MSDS

(13) CAS number.

The responsible party is the manufacturer, importer, or individual who prepared the MSDS and can provide additional information on the hazards of the chemical agent and appropriate emergency procedures. Different formats can be used by responsible parties for supplying the required MSDS information. A sample MSDS for chemical agents is shown in Exhibit 4.

b MSDS Acquisition and Control

Chemical manufacturers and importers are required to ensure that MSDS for the hazardous chemical agents they produce are sent to chemical users. For this reason a MSDS should be received with each initial shipment of a chemical agent. The MSDS may be physically attached to the shipment or accompany the shipment in a separate envelope. For cases where repetitive procurements of the same chemical agent to the same supplier are made, each shipment may have a MSDS accompany it. This MSDS may or may not include updated information so it is important that the requisitioner review the MSDS for the shipment received to determine if new information is included. If new information is included on the MSDS, the old MSDS must be replaced.

For each hazardous chemical agent purchased, proper coordination is necessary to ensure that an MSDS is received with the shipment, referenced to the master inventory list and maintained for future reference. For this

reason all procurement requests for chemical agents shall be forwarded to the purchasing agent or other procurement authority at the Location for processing. The purchasing agent

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

shall include with the purchase order for the chemical agent a request for a MSDS. Exhibit 5, Sample Language for a Purchase Order Requesting a MSDS, is provided as an example of the type of language to include in a letter to request an MSDS from the chemical supplier. MSDS request letters shall be sent to the supplier by return receipt and a record kept of attempts made to obtain a MSDS. Documentation shall be maintained including dated copies of requests made to each supplier and the date and nature of each response received.

When the chemical shipment is received the requisitioner shall review the accompanying MSDS to determine if it contains new or updated information. After review, the MSDS shall be forwarded to the procurement authority or other person responsible for inventory control at the Location. If the MSDS is for a new chemical agent the inventory data shall be entered on the master inventory list and the MSDS included in the MSDS reference file system. If the MSDS contains updated information the new MSDS must replace the old MSDS in the reference file system.

Procurement of new chemical agents or appearance of updated information on a new MSDS may identify situations where a new physical or health hazard is introduced in the work environment. In this situation additional training of employees may be required. When reviewing the MSDS the requisitioner shall take note of new potential hazards associated with the chemical agent and contact his or her supervisor and/or CDSO to determine if additional training of employees is needed.

c Trade Secrets

The OSHA HCS contains provisions which allow a chemical manufacturer or importer to withhold chemical identity information from an MSDS to protect a "bona fide" trade secret. However, the MSDS still must disclose the properties and hazards of any chemical for which a trade secret claim is made. Specific procedures for

disclosure of trade secret chemical identity information are described in the OSHA HCS. In general, trade secret chemical identity information can be disclosed to health professionals who provide occupational health

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

services to exposed employees and employees or their designated representatives. Requests must be in writing and describe in reasonable detail the occupational health need for the information and the procedures to be used to maintain the confidentiality of the disclosed information. For further information on trade secret chemical identity disclosure procedures refer to the OSHA HCS.

d MSDS Control and Maintenance

All employees or their designated representatives shall have ready access during each work shift to MSDS for the hazardous chemical agents that they handle or use, or to which they are occupationally exposed. Employees and their designated representatives shall be informed of the location of the MSDS reference file and how to gain access to it.

Each Location shall choose one central area, identified by building and room number, where the main MSDS reference file shall reside. This area shall be chosen carefully because it is necessary to provide employees with ready access during each work shift to the MSDS reference file. In the case where there are several buildings interdispersed at one Location it will not be possible to have only one MSDS reference file. In this case an area, identified by room number, shall be chosen for each building where a secondary MSDS reference file shall reside. The secondary MSDS reference file shall not replace the main MSDS reference file, but serve as a backup to allow ready access by employees. Copies of MSDS in the main MSDS reference file shall be provided for inclusion in the secondary MSDS reference file. This can be accomplished at the time of chemical agent acquisition by following the procedures stated in this MANUAL. By noting the building number on the Inventory Control Sheet for Acquisition of Chemical Agents, Exhibit 2, the procurement authority or other person responsible for inventory control at the Location can ensure that a copy of the MSDS goes to the secondary MSDS reference file for that building number as well as the main MSDS reference file.

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

The MSDS reference file can be maintained on hard copy (i.e., paper), electronic media (i.e., compact disk) or microfiche. MSDS received from the chemical supplier will be paper copies but the Location can choose to replace the paper copy with the same MSDS on electronic media or microfiche. This is only acceptable if the MSDS is for the same exact chemical agent, whether it be a pure compound or mixture of a different supplier.

All MSDS are considered exposure records in accordance with OSHA standard 29 CFR 1910.20, Access to Employee Exposure and Medical Records. As exposure records they must be retained by the Location for a period of 30 years.

4 Labeling and Other Forms of Warning

a Label Information

In general, all containers of hazardous chemical agents must be labeled, tagged or marked with the identity of the chemical agent, appropriate hazard warnings, and the name, address, and phone number of the manufacturer, importer or other responsible party. The hazard warning can be words, pictures or symbols which provide an immediate understanding of the primary health and/or physical hazards of the chemical agent. The identifier of the chemical agent that is listed on the label must be a designation that can be easily referenced to the MSDS or master inventory. Any designation can be used but the chemical name or CAS number is most commonly used.

b Control and Maintenance of Label Information

In most cases original containers of hazardous chemical agents received at the Location will already be labeled. The requirement to provide container labeling is a responsibility of the chemical manufacturer, importer or supplier who produces and distributes the hazardous chemical agent to a user. When shipments of hazardous chemical agents are received at the Location, the shipment shall be immediately inspected to determine if the required label information appears on each container. Containers that are

not labeled shall not be accepted. The purchasing agent or other procurement authority at the Location shall contact the chemical

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

supplier to request a new shipment with appropriate labels on each container.

Personnel receiving shipments and deliveries of hazardous chemical agents should not be confused between the shipping labels required by the DOT and the labels required by the OSHA HCS. DOT labels that identify the general class of material in the shipping container (e.g., poison, corrosive, flammable, explosive, etc.) do not meet the label requirements of the OSHA HCS. Because these labels are designed for hazard warning during transport they are not, by themselves, sufficient warning of the hazards employees may encounter while using or handling the chemical agent. Although the DOT label can provide some indication of the hazard class it does not convey all the label information required by the OSHA HCS.

For original containers of hazardous chemical agents already present at the Location, the labels may need to be replaced or supplemented with additional information.

The requirement to do this will depend on the following type of operation in which the hazardous chemical agent is used:

(1) Laboratory operations: The labeling requirements for containers of hazardous chemical agents used in laboratory operations are treated differently from other operations. Existing containers already present in the laboratory work area do not have to be relabeled or supplemented with additional information. The only requirement is to ensure that labels on containers of incoming shipments of hazardous chemical agents brought into the laboratory work area are not removed or defaced. In

addition, transfer containers and reaction containers (e.g., test tubes, flasks) are not required to have hazardous communication labels.

(2) All other operations: For the remaining operations at the Location, including pilot plant and maintenance operations, all containers of hazardous chemical agents must be appropriately labeled whether or not they are already present or acquired in a new chemical shipment. If

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

an original container is found that is not labeled, tagged, or marked with the required information, then a proper label will have to be prepared and affixed to the container. Labels can be requested from the original chemical supplier or prepared using the information from the MSDS. In addition, preprinted labels can be purchased for several common chemical agents from industrial supply stores.

If an original container is found that has no label on it, a reasonable effort should be made to determine its contents. If the contents are identified, a label must be prepared and affixed to the container. If the contents cannot be identified then the container should be designated as hazardous waste and included for disposal in the Location Hazardous Waste Disposal Program.

Similar to laboratory operations, portable containers into which hazardous chemicals are transferred from labeled containers and which are intended only for the immediate use of the employee performing the transfer do not have to be labeled with Hazard Communication labels. However, if the portable container is left beyond the employee's work shift and may possibly be used by another employee, then the portable container will have to be labeled.

Alternate methods of labeling are allowed for stationary containers of hazardous chemicals in the work

area such as reaction vessels and storage tanks. Signs, placards, batch tickets and other written forms of warning can be used instead of relabeling the stationary container each time a different hazardous chemical is stored in it. The sign, placard or batch ticket must provide the same information as a label and it can be placed or posted in close proximity to the stationary container.

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

c Labeling Exemptions

Other Federal agencies require labeling on the articles they regulate to inform users of ingredients and hazards. These articles are exempt from any additional labeling requirement under the OSHA HCS. These Federal agencies and their areas of jurisdiction are listed in Table 1. The articles listed are exempt only from the labeling provisions but may be included in other program requirements if not specifically excluded from the scope of the program.

Table 1

LABELS REQUIRED BY OTHER AGENCIES

Agency	Authority	Jurisdiction
Environmental Protection Agency	Federal Environmental Pesticide Control Act (formerly FIFRA)	Pesticides
Consumer Product Safety Commission	Federal Hazardous Substances Labeling Act	Hazardous and toxic household products
Food and Drug Administration	Fair Packaging and Labeling Act	Packaging and labeling of food, drugs, cosmetics, and medical devices
Bureau of Alcohol, Tobacco, and Firearms	Federal Alcohol Administration Act	Distilled beverages, wine, and malt beverages

5 Employee Information and Training

a Training Elements

All employees, including supervisors, at the Location who handle, use, or are potentially exposed to hazardous chemical agents in the workplace shall be provided with information and training about the Location's Hazard Communication Program. Which employees receive information and training depends on the determinations made during the physical

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

inventory and hazard assessment process. Initial information and training shall be

provided to all employees identified as a result of this process and shall include the following elements:

(1) The requirements of the OSHA HCS.

(2) The requirements of the EPA regulations implementing EPCRA.

(3) The location and availability of the Location's written Hazard Communication Program including inventory lists of hazardous chemical agents and the MSDS reference file system.

(4) The types of operations in their work area where hazardous chemical agents are present.

(5) Methods that employees can use to detect the presence of a hazardous chemical in their work area such as the visual appearance and odor of hazardous chemicals when they are released. Monitoring instruments that are normally used by the employer also shall be described.

(6) Physical and health hazards associated with exposure to hazardous chemicals in their work area.

(7) Procedures for reporting spills, discharges, or other releases into the environment of hazardous chemical agents.

(8) Specific measures to protect themselves from hazards in their work areas such as the types of protection afforded by engineering controls, safe operating procedures, personal protective equipment and emergency procedures.

(9) Details of the Location's Hazard Communication Program including explanations of the MSDS reference file system, labels and warning signs, and other sources of hazardous chemical information.

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

Any time a new type of hazard is introduced into the work area, additional training will be necessary. The method to determine if a new hazard may be

introduced into the work area is at the time of receipt of new chemical shipments. As described in this MANUAL the requisitioner of a new chemical agent shall review the MSDS to determine if new hazards are described on the MSDS for which previous training was not provided. An example would be a type of chemical which is a sensitizer (i.e., causes allergic reactions) and this type of hazard is new to the employees in the work area. There may also be situations where updated information on an MSDS describes new hazards for a chemical agent that is already present in the work area. When reviewing the MSDS, the requisitioner will need to be attentive and note these situations.

Additional training sessions will not be as extensive as the initial information and training session. Only the above elements pertinent to the new hazard need to be covered. For assistance in determining additional training requirements contact your supervisor and/or CDSO.

b Training Methods

In preparation to conduct information and training sessions on any subject, consideration should be given to how the learning process works and what methods can be used to make the training effective. Important concepts to remember in planning a training session are how to present the information clearly and memorably, how to motivate employees to learn, how to prepare employees to transfer their newly acquired knowledge and skill to their performance on the job and how to minimize irrelevant information and focus on the basics. The following are common instructional methods used in training sessions. Which method or combination of methods are selected will depend on the size of the audience, the subject matter, time schedules and other variables.

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

(1) Group lectures (This method is used when all members of a large group need to learn the same information and the information is conducive to mass display.)

(2) Group and individual role plays (Group members play roles and make decisions based on real-life situations. This method would be used to simulate emergency evacuations and other emergency procedures that must be performed within a critical time frame.)

(3) Emergency equipment demonstrations (People learn by watching demonstrations and practicing behavior with fellow class participants.)

(4) Self-paced programmed instruction (The worker responds to written questions or situations to his/her own pace and receives immediate feedback.)

(5) Charts and/or diagrams (Pictures and diagrams reinforce learning.)

(6) Audiotape/slides (This media allows flexibility of site-specific photographs and are readily available for playback and review.)

(7) Film/videotape (An appealing alternative to lecture, graphics and animation can be used to hold participants' interest and provide immediate feedback for new behaviors or performance.)

c Implementation of Information and Training Sessions

(1) Planning

Each Location is responsible for ensuring that their employees receive information and training in its Hazard Communication Program. Decisions will need to be made concerning resources, cost, coordination and scheduling so it is recommended that each Location develop a training plan. Variables that should be addressed in the training plan include the following:

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

(a) Objective: Objectives are specific single concept statements of what is to be accomplished by the

training. Each training session could have several objectives. The attainment of objectives should be subject to

verification through some type of evaluation.

(b) Audience: Employees who will need to be trained should be identified and listed. These lists can be maintained and cross-checked against lists of employees who have completed training to ensure all identified employees are covered.

(c) Instructors: Several instructors may be involved in order to complete training for all identified employees. Supervisors could be trained as instructors for their employees. Agency safety and health personnel or outside consultants could provide training services.

(d) Instructional methods: (reference the previous section).

(e) Scheduling: The length of time necessary to complete all training sessions will need to be established before scheduling times and dates that the sessions can be conducted.

(f) Anticipated costs: Cost estimates for materials, travel, and professional services (i.e., consultants) shall be anticipated and included in the budget.

(2) Execution

Execution of the information and training program and the manner in which the training sessions are conducted will depend on the decisions made in your training plan. Ideally, the decisions made on each variable in your training plan will revolve around the objectives

you identify. Some objectives can be general where the material presented is applicable to all employees.

J PROGRAM DESCRIPTION/PROCEDURES (Continued)

Other objectives can be more specific since it is a requirement that employees are trained in the hazards of the specific chemical agents in their work area. To accomplish this it is recommended to divide the training program into a number of different training sessions, with the information presented in one session building on the information to be presented in the next session. Employees should be divided into groups by management unit or work area and instruction provided by their supervisor. The supervisor will be responsible for scheduling and conducting each training session, and documenting that employees have completed all training sessions.

Before supervisors can provide instruction to employees, they will need to be trained. This can be accomplished by having all supervisors participate in a train-the-trainer course provided by Agency personnel or private consultants. The same information and materials used to train the supervisor could be used by the supervisor to train employees. However, one important aspect to remember is that the supervisor will need to incorporate specific information and materials into the training sessions provided to employees to make it applicable to the Location's Hazard Communication Program.

(3) Documentation

To ensure that each employee receives information and training as required the Location shall maintain documentation of all training sessions that are completed. The documentation shall include the date, place, employee names, and content of all training sessions completed for the Location's Hazard Communication Program. This includes additional training sessions conducted for new hazards introduced into the work area. This documentation is required to ensure compliance with the OSHA HCS.

K RESERVED

L EXHIBITS

1 Sample Written Program

2 Inventory Control Sheet for Acquisition of Chemical Agents

3 Inventory Control Sheet for Disposition of Chemical Agents

4 Sample Material Safety Data Sheet

5 Sample Language for a Purchase Order Requesting an MSDS

EXHIBIT 1

Agricultural Research Service

Hazard Communication Program

Sample Written Program

NOTE: The written program must include the specific methods that are used to implement and operate a Hazard Communication Program in accordance with regulatory requirements and Agency policy. The specific methods described in this sample written program are for illustrative purposes and can be modified or additional items may be added to satisfy local needs and practices.

Hazard Communication Program

ARS [Date]

[Area]

[Location name]

[Location address]

I. Introduction

The purpose of this instruction is to ensure that [Location name] is in compliance with the provisions of the OSHA Hazard Communication Standard (HCS).

The [title of individual] is the general coordinator of the Location program acting as the representative of [Center Director, Laboratory Director, Location Coordinator] who has overall responsibility for the Location program.

Each employee at [Location name] will be informed of the requirements of the HCS and his or her rights under these regulations, the nature of chemical hazards in the workplace, and how to protect themselves from these chemical hazards.

II. Chemical Agent Inventory System

The [title of individual] will maintain a list of hazardous chemical agents used and stored at [Location name] and update the list at least annually. The method used to update our list of hazardous chemical agents is by [conducting an annual physical inventory/using inventory control sheets]. The master list

of hazardous chemical agents is maintained at [specific location within facility].

It is ARS policy to rely on the physical and health hazard evaluations done by chemical manufacturers and importers, as provided in the MSDS, to determine the hazardous nature of the chemicals we receive from them and use.

Exhibit 1 (Continued)

III. MSDS Reference File System

The [title of individual] will maintain a reference file system containing a MSDS for every substance on the master list of hazardous chemical agents. The MSDS in the file system will consist of MSDS provided by chemical manufacturers, importers and other suppliers. The main MSDS reference file is maintained at [specific location within facility]. Secondary MSDS reference files are maintained at [specific locations within facilities]. All employees will have access during all workshifts to the MSDS reference file.

Each time a chemical is ordered the [title of individual] will request a MSDS from the chemical supplier at the time of purchase. MSDS received will be reviewed by the person who submitted the requisition for the chemical purchase to determine if the MSDS should be entered into the reference file system. MSDS for new chemical agents and MSDS for existing chemical agents that contain new or updated information will be entered into the reference file system by [title of individual]. Documentation of unfulfilled requests for MSDS from a supplier will be maintained by the [title of individual].

IV. Labels and Other Forms of Warning

All chemical shipments will be inspected by the person who submitted the requisition for the chemical purchase to determine that all containers in the shipment are properly labeled. Any container that is not properly labeled as required will be refused and returned to the supplier by the [title of individual].

All containers received in chemical shipments that are properly labeled as required, will not have the label removed or defaced. Existing containers of hazardous chemicals, excluding containers present for use in laboratory work areas or stored for use in laboratory operations, that are not properly labeled will have an in-house label prepared and affixed to the container by [title of individual].

V. Employee Information and Training

Each employee who works with or is potentially exposed to hazardous chemicals at [Location name] will be informed of the requirements of the HCS and EPCRA, and the location and availability of the list of hazardous chemical agents, the MSDS reference file, and this written Hazard Communication Program.

These same employees will receive training on the hazardous properties and safe use of chemical agents in their work areas, including chemicals in unlabeled pipes. Additional training will be provided for employees whenever a new hazard is introduced into their work areas and for employees assigned to nonroutine tasks. Hazardous chemical training is conducted by [title of individual, department, or

contract vendor] (attach a copy of the course outline and a

Exhibit 1 (Continued)

description of course materials). This training will emphasize the following elements:

o types of operations where hazardous chemicals are used in the work area;

o methods that employees can use to detect the presence of a hazardous chemical in the work area;

o physical and health hazards associated with exposure to hazardous chemicals;

o procedures to protect against hazards, including personal protective equipment, engineering controls, safe operating procedures and emergency procedures;

o procedures for reporting spills, discharges, or other releases of hazardous chemicals into the environment; and

o explanations of the chemical agent inventory system, MSDS reference file system, labels and other forms of warning, and other sources of hazardous chemical information.

The [title of individual] will monitor and maintain records of employee training and advise the [Center Director, Laboratory Director, Location Coordinator] on training needs.

VI. Outside Contractors

The [title of individual] will be informed of all contracted work to be done by outside firms and notify the contractors or their representatives of any chemical hazards which may be encountered in the normal course of their work. MSDS for the chemical hazards contractors may encounter will be made available for their review.

EXHIBIT 2

Agricultural Research Service

Hazard Communication Program

Inventory Control Sheet

Acquisition of Chemical Agents

Section A: Identification

Location Name: Date:

Management Unit: Prepared by:

(Instruction: If hazardous, complete Section B, C, and D)

Section B: Hazard Assessment

Hazardous: Not Hazardous:

Section C: Inventory Data

1. Chemical name:

2. CAS number:

3. Supplier name:

4. Number of containers:

5. Quantity (total in metric units):

6. Building number or name:

7. Room number or name:

8. Physical state:

9. EPA Hazard Category:

Section D: Material Safety Data Sheet (MSDS) Status

1. Was an MSDS received with the shipment?

yes; proceed to question 2;

no; proceed to Section D, item 1;

Exhibit 2 (Continued)

2. Does this MSDS identify a chemical agent that is currently identified on the master inventory list?

yes; proceed to question 3;

no; proceed to section E, items 2 and 3

3. Does this MSDS identify new or updated physical or health hazard information?

yes; proceed to section E, item 3;

no; discard this MSDS

Section E: Material Safety Data Sheet (MSDS) Action

1. Date of MSDS request to vendor:

2. Date of entry into master inventory list:

3. Date of entry into MSDS reference file system:

EXHIBIT 3

Agricultural Research Service

Hazard Communication

Inventory Control Sheet

Disposition of Chemical Agents

Section A: Identification

Location name: Date prepared:

Management unit: Prepared by:

Building number or name: Calendar Quarter

(please circle)

Room number or name: 1 2 3 4

Section B: Chemical Agent Information:

(Instruction: For each empty original container please list the following information)

Chemical Name CAS No. Container Quantity Supplier

EXHIBIT 4

SAMPLE MATERIAL SAFETY DATA SHEET

Vinyl Chloride

CAS #75-01-4

Manufacturer's Name & Address Emergency Contact

XYZ Chemical, INC John H. Doe (615) 555-1234

440-01 Carcin Alley

Elizabeth, New Jersey 07231 Information Contact

Susan S. Smith (615) 555-5678

Prepared By Date Prepared

Susan S. Smith 2/18/87

Chemical Identity Synonyms, Trade and Common Names

Vinyl Chloride Monomer VCM: Vinyl Chloride, inhibited;

CAS #75-01-4 Chloroethylene; Chlorethene;

CH2 =CHCL Monochloroethylene; Ethylene

monochloride

OSHA PEL

1 ppm (8hr. TWA); 0.5 ppm (8 hr. TWA) action level; 5 ppm ceiling concentration

ACGHIH TLV

5 ppm (8 hr. TWA); Human carcinogen

Other Limits Recommended

NIOSH - Lowest detectable (NIOSH Recommended Exposure Level, REL)

Hazardous Components/Ingredients

Vinyl chloride monomer 99.9%

Contaminants may include acetaldehyde, acetylene, iron, hydrogen chloride.

Exhibit 4 (Continued)

An inhibitor (e.g., approx. 50 ppm phenol) may be added to prevent polymerization during storage.

Physical/Chemical Characteristics

Boiling Point 7F (-14C)

Specific Gravity 0.091

Vapor Pressure: 230 mm Hg at 20C

Solubility in Water: Negligible (0.1% at 25C)

Appearance and Odor: Colorless, Sweet- smelling gas at

room temperature. Readily liquefies

below -14C or at increased pressures.

Vapor Density (Air = 1) 2.2

Melting Point: -245F (-160C)

Evaporation Rate: Information not available

Fire and Explosion Information

Flash Point (Method Used): 108F/-77C (COC)

Flammable Limits in Air (% by volume): Lower (LEL) 3.6%

Upper (UEL) 33.0%

Extinguishing Media: Dry Chemical or carbon dioxide for small

fires. Heavy water spray, for or alcohol

foam for lager fires to cool containers

and protect response workers (ineffective

extinguishing material).

Special Fire Fighting recommendations:

Stop flow of gas if possible; if flow cannot be stopped, fight fires from a distance or allow to burn. If possible remove container form fire area and/ or isolate form other flammable materials.

Unusual Fire and Explosion Hazards:

Heavier than air - can flow along surfaces to distant sources of ignition and flash back. VCM is highly flammable and can form explosive mixtures in air. If heated or exposed to light, air or catalyst, it can undergo violent exothermic reaction.

Reactivity Data

Stability: Inhibited VCM is stable at room temperature.

Conditions to Avoid: Heat, sparks, or other sources of ignition

can result in a flashback fire and/or explosion.

Exposure to heat, light, air oxidizing agents,

copper, or aluminum can result in vigorous reaction.

Hazardous Polymerization : X may occur does not occur

Exhibit 4 (Continued)

Hazardous Decomposition Products: Hydrogen Chloride, Carbon Monoxide, phosgene.

Health Hazard Data

Main Route(s) of Exposure: Inhalation, Skin, Eye contact

Signs and Symptoms of Overexposure:

Acute: Central Nervous System (CNS) disturbance (e.g..

headache, nausea, drunkenness, drowsiness,

narcolepsy, unconsciousness, respiratory paralysis, euphoria, cardiac arrest); Asphyxia, Pulmonary damage; Liver and Kidney damage; Dimmed vision; Skin irritation, redness, frostbite and pain; Nonpermanent corneal injury with eye contact.

Chronic: Cancer; CNS and autonomic nervous system effects;

peripheral circulation disturbances (Raynaud's phenomenon), skeletal and skin changes,

immunosuppression.

Carcinogenicity: NTP-Yes IARC-Human Yes OSHA-Yes

-Animal Yes (29 CFR 1910.1017)

Medical Conditions Aggravated by Exposure: No information available

Emergency and First-Aid Procedures

Inhalation: Promptly take victim to uncontaminated, well-ventilated area. Resuscitate if necessary (oxygen may be necessary). GET MEDICAL ATTENTION IMMEDIATELY.

Skin Contact: Promptly remove contaminated shoes and clothing and

thoroughly wash affected area with large amounts of war water. If frostbite occurs, war affected parts by wrapping. Gently exercise affected parts to restore circulation.

Eye Contact: Immediately flush eyes with large amounts of water with

lids lifted, for no less than 15-20 minutes. GET

IMMEDIATE MEDICAL ATTENTION.

Precautions for Safe Handling and Use

Storage and Handling Precautions:

Store in a cool, well-ventilated area isolated from ignition sources or oxidizing agents. Cylinders must be protected from physical damage.

Exhibit 4 (Continued)

Other Precautions:

VCM is a cancer hazard and must be stored in a designated regulated area with controlled and limited access. Where workers may be exposed, storage and other areas must be monitored periodically for levels above the 0.5 ppm action level.

Spill and Leak Procedures:

Immediately remove and/or turn off all sources of ignition. Evacuate and isolate area until leak has been stopped and area well-ventilated. Stop leak if possible and spray area with large amounts of water to suppress vapors and reduce temperature. Response personnel must use appropriate personal protective clothing and equipment to prevent breathing contaminated air or coming into contact with liquid VCM.

Waste Disposal Method:

High temperature incineration in accordance with EPA guidelines.

Control Measures

Ventilation: Local exhaust, explosion-proof. Process enclosure, if possible.

General ventilation must also be explosion-proof.

Respiratory Protection (Specific Type):

Up to 10 ppm: 1) Combination Type C supplied air respirator

(SAR), demand type with half-mask facepiece and

auxiliary self-contained air supply; or

2) Type C SAR, demand type with half-mask

facepiece; or

3) Any chemical cartridge respirator with and

organic vapor cartridge that has at least a one-hour service life in concentrations of vinyl chloride up to 10 ppm.

(See 29 CFR 1910.1017 (g)(4) for the required selection of respirators at higher concentrations.)

Protective Gloves:

Neoprene or other VCM-impermeable material.

Eye Protection:

Chemical-protective goggles or faceshield, as needed. Eyewash station must be in working order and readily accessible for emergency use.

Exhibit 4 (Continued)

Other Protective Clothing/Equipment:

Chemical-protective clothing and boot covers.

Work/Hygienic Practices:

Safety showers and eyewash stations must be in working order and readily accessible in the work areas.

EXHIBIT 5

SAMPLE LANGUAGE FOR A PURCHASE ORDER REQUESTING AN MSDS

The Occupational Safety and Health Administration Hazard Communication Standard, other Federal

regulations, and Agency policy require us to maintain and distribute material safety data sheets (MSDS) for all chemical substances and hazardous materials used by our employees. To fulfill these obligations, we request a completed MSDS for the following purchase items:

Item Number Product Name

[Item numbers and product names as appearing on the purchase order, including any applicable trade names, code numbers, or stock numbers]

MSDS's should be sent to the address provided below on or before the date the product(s) will be delivered. We also request any additional information you currently have, or may acquire in the future, on the safety and health requirements or effects concerning these products.

[Shipping address or other address provided by Agency]

If you can certify that MSDS information for a listed product has already been submitted to this location, and there has been no change affecting the accuracy of that information, then resubmission of that MSDS is not required. In certifying a previous MSDS submission, the following information should be provided: product name, previous purchase order or contract number, agency name and address where the MSDS was sent, and date of the previous submission.